

cleaving a nucleic acid molecule comprising a nucleic acid sequence that hybridizes to or has more than 90% sequence identity to a second nucleic acid sequence selected from the group consisting of:

- (a) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 2; and
- (b) a nucleic acid sequence that is SEQ ID NO: 1.

30. (Added) The host cell according to claim 29, wherein the host cell is a plant cell.

31. (Added) A transgenic plant comprising the plant cell of claim 30.

32. (Added) The transgenic plant according to claim 31, wherein the plant is a maize plant.

33. (Added) A propagation material of a plant comprising the plant cell of claim 31.

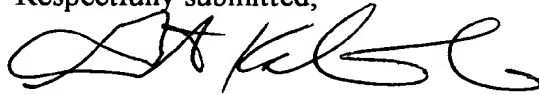
REMARKS

Applicants have amended claim 1 to improve its form and to recite a nucleic acid molecule comprising part of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO: 2, a part of the nucleic acid sequence of SEQ ID NO: 1, a part of a nucleic acid sequence hybridizing to the above nucleic acid sequences and a part of a nucleic acid sequence that has more than 90% sequence identity to the coding region of SEQ ID NO: 1, wherein the part is sufficient to reduce the expression of a debranching enzyme in a plant cell when introduced in antisense orientation. Support for this amendment may be found, for example, on page 6, lines 3-16; page 10, lines 23-29; page 12, lines 9-23; page 14, lines 3-10; and page 15, lines 11-14. Applicants have amended claim 9 to improve its form and to incorporate material from claim 1 as originally filed. Applicants have amended claim 15 to incorporate the material from canceled claims 10-14. Applicants have amended claim 16 to recite a host cell comprising the nucleic acid molecule of amended claim 1. Applicants have amended claim 21 to improve its form.

Applicants have added claims 22-33. Support for added claims 22-23 may be found, for example, on page 6, lines 3-16 and on page 14, lines 3-10. Support for added claims 24-26 and 30-32 may be found, for example, on page 10, line 23 to page 11, line 13. Support for added claim 27 may be found, for example, on page 11, lines 14-17. Support for added claim 28 and 33 may be found, for example, on page 11, lines 18-20. Support for added claim 29 may be found, for example, in original claim 16 and on page 10, line 23 to page 11, line 4.

Applicants have also canceled claims 2 and 17-20 without prejudice. None of the amendments adds new matter. Claims 1, 9, 15, 16 and 21-33 are now pending.

Respectfully submitted,



James F. Haley, Jr. (Reg. No. 27,794)

Elinor K. Shin (Reg. No. 43,117)

Attorneys for Applicants

Grant Kalinowski (Reg. No. P-48,314)

Agent for Applicants

c/o FISH & NEAVE

1251 Avenue of the Americas

New York, New York 10020

Tel.: (212) 596-9000

Fax.: (212) 596-9090

Version Showing Changes Made

1. (Amended) [A] An isolated nucleic acid molecule [encoding a protein from Zea mays with the biological activity of a debranching enzyme,] comprising a nucleic acid sequence, wherein the nucleic acid sequence is selected from the group consisting of:

- (a) [nucleic acid molecules] a part of a nucleic acid sequence encoding a protein comprising the amino acid sequence [depicted in] of SEQ ID NO: 2;
- (b) [nucleic acid molecules containing the nucleotide sequence depicted under] a part of a nucleic acid sequence that is SEQ ID NO: 1;
- (c) a part of a nucleic acid [molecules] sequence hybridizing to [a] the nucleic acid [molecule] sequence of (a) or (b); and
- (d) a part of a nucleic acid [molecules the nucleotide] sequence [of which deviates from the nucleotide sequence of a nucleic acid molecule of (a), (b) or (c) due to the degeneracy of the genetic code] that has more than 90% sequence identity to the coding region of SEQ ID NO: 1;

wherein the part is sufficient to reduce the expression of a debranching enzyme in a plant cell when introduced in antisense orientation.

9. (Amended) A protein [from Zea mays, which has the biological activity of a debranching enzyme and is] encoded by [the] a nucleic acid molecule [of claim 1 or 2] comprising a nucleic acid sequence, wherein the nucleic acid sequence hybridizes to or has more than 90% sequence identity to a second nucleic acid sequence selected from the group consisting of:

- (a) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 2; and
- (b) a nucleic acid sequence that is SEQ ID NO: 1.

15. (Amended) [Starch] A starch obtainable from [plant cells of claim 10 or from plants of any one of claims 11 to 14] a plant cell or a plant comprising the plant cell, wherein the plant cell is transformed with a nucleic acid molecule comprising a nucleic acid sequence, wherein the nucleic acid sequence hybridizes to or has more than 90% sequence identity to a second nucleic acid sequence selected from the group consisting of:

- (a) a nucleic acid sequence encoding a protein comprising the amino acid sequence of SEQ ID NO: 2;
- (b) a nucleic acid sequence that is SEQ ID NO: 1.

16. (Amended) A [transgenic plant] host cell [in which] comprising the [activity of a debranching enzyme encoded by a] nucleic acid molecule of claim 1 [or 2 is reduced when compared to untransformed cells due to the inhibition of transcription or translation of endogenous nucleic acid molecules encoding a debranching enzyme, the inhibition of the transcription being achieved by

- (a) the expression of a nucleic acid molecule of claim 1 or 2 or of a part of such a nucleic acid molecule, wherein the nucleic acid molecule or part thereof is linked in antisense-orientation to regulatory elements ensuring the transcription in plant cells;
- (b) the expression of a ribozyme specifically cleaving transcripts of the nucleic acid molecules of claim 1 or 2; and/or
- (c) the expression of a cosuppression RNA, leading to the inhibition of the expression of endogenous genes encoding a protein of the invention].

21. (Amended) [Use of starch of claim 15 or 19 for the production of] A method for producing foodstuffs or [of] industrial products using the starch of claim 15.